Reviewer's report

Title: The relationship between service quality measures and patient willingness to recommend at a national oncology provider network

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Reviewer: Reijo Sund

Reviewer's report:

In principle, this is an interesting and well written manuscript. Unfortunately, there seems to be problems with the statistical analyses. Unless the following (hopefully constructive - my apologies if you found it unfair) critique is carefully addressed, the manuscript can't be considered as scientifically sound.

How many patients declined to participate in the survey? Could this have caused your sample to be selected towards more satisfied patients?

It seems that all your questionnaire items are very skewed so that more than 50% of patients give the highest score. It doesn't sound to be a very good idea to consider these measures as (normally distributed) continuous variables. Categorization could be a simple solution here, although it is not without problems either.

Calculation of correlations with this kind of data is a bit problematic. The use of Spearman's rho doesn't solve the problems here, because you apparently have a huge number of tied ranks in your data. Categorization and the use of polychoric correlations could be an option.

You have quite many (probably) highly correlated variables measuring very similar things in your data. The standard approach in that kind of case is to reduce the dimensionality by using an appropriate method, such as factor analysis. That could be a good idea also with this data, because then you would have only a few factors (probably with sensible interpretations), and further, the use of factor scores would result in uncorrelated normally distributed variables in your models.

I'm not at all convinced that stepwise logistic regression (even with the use of split samples) is an adequate approach to deal with multicollinearity. Please see the previous comment on possible dimension reduction.

You mention that "a heterogeneous patient population that has an extensive exposure to different clinical organizations and clinical teams during their treatment history and service quality measurement at essentially the same time that service is delivered, rather than days or weeks later" are strengths of your study. However, I see all these as limitations. Measuring the quality of services among very ill patients could certainly be important from many points of view, but you should justify more carefully why the satisfaction would reflect the quality of
care and not only a glimpse of hope in patients' difficult situation. More importantly, pooling heterogeneous population from different organizations seems to blur rather than explain the possible associations. For example, it would be interesting to know whether the proportions of patients willing to recommend vary by diagnosis or by organization. If that is the case, it may be oversimplification to consider only one model here. Moreover, you obviously have hierarchical data here: patients are nested to organizations - this should be taken into account.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.